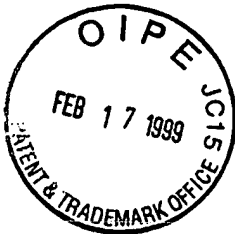




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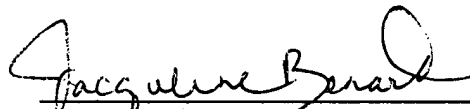
CERTIFICATION  
**FAX RECEIVED**

MAR 18 1999

**GROUP 3600**

January 18, 1999

This is to certify that I am familiar with the French and English languages and that the attached English translation is true and accurate to the best of my knowledge and belief.

  
\_\_\_\_\_  
Jacqueline Benard  
Translator

Certified copy of patent application

INPI National Institute of Industrial Property

PATENT OF INVENTION

Certificate of utility – Certificate of addition

OFFICIAL COPY

The Executive Director of the National Institute of Industrial Property certifies that the attached document is a true certified copy of a request for title of industrial ownership filed with the Institute.

Prepared in Paris on October 13, 1998

For the Executive Director of the National  
Institute of Industrial Property  
Head of the patent department

/s/  
Martine PLANCHE

1 REQUEST for Issue of a title of industrial property

- a        x Patent of invention
- b        Certificate of utility
- c        Divisional application
- d        Change from a European patent request

Date documents were handed over

January 26, 1994

National file No

94 00843

Date of Filing

January 26, 1994

Postal code where filed

75

2. MANDATORY OPTIONS at the time of filing (except for certificate of utility)

The applicant requests a delayed registration of the search report        YES  
X NO

If option No is checked and the applicant is an individual, he requests a phased payment of the search report fee

YES  
X No

Nature

Number

Date of first request

3. Name and address of applicant or agent where all correspondence should be sent

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Conseils en Propriété Industrielle  
29 rue Cambacérès  
75008 PARIS

4. Permanent authority number

5. Agent's reference

CG/AA 550 OREAL

6. Agent's telephone number

47 42 13 84

7. Title of the invention

Anhydrous cosmetic or dermatologic composition containing the association of one silicon oil and one ethylene homo- or copolymer wax

8. APPLICANT(S): Name and first name (underline surname) or corporate name and legal description

Business corporation called: L'OREAL

Country  
FRANCE

Fees paid    X for filing  
                   X for search report  
                   for priority claim  
                   for claim (from the 11<sup>th</sup>)

12. If the applicant is a non taxable individual, he requests or has requested production and royalties  
YES  
X NON

14. Departments Prior to this request

15. Applicant or agent signature	Signature of	Signature after filing
Name and title of signatory	receiving clerk	of request with INPI
Registration number.		
/s/		/s/
B. STALLA-BOURDILLON		
(No 92 1231)		

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Patent administrative unit

NAME OF INVENTOR

National filing number

(if the applicant is not the inventor or sole inventor)

94 00843

Title of the invention: Dermatologic or cosmetic composition containing the association of a silicon oil and an ethylene homo- or copolymer wax.

The undersigned

Business corporation named: L'OREAL

With its corporate offices at: 14 rue Royale, 75008 PARIS

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NOTE: In special cases, the name of the inventor may be followed by the name of the company to which he belongs when the latter is different from the filing or owning company.

Date and signature(s) of the applicant(s) or agent

Paris, February 15, 1994

/s/

B. STALLA-BOURDILLON

This invention relates to an anhydrous, siliconized cosmetic and dermatologic composition that, in its fatty phase, contains the association of a silicon oil and an ethylene homopolymer to copolymer wax.

The use of siliconized oils in the formulation of products for a topical application is particularly sought-after insofar as they offer both a chemical inertia as well as very good lubricating and film-forming properties. In particular, by application on the skin or on keratinous fibers, they cause the formation of a film that produces a homogeneity, a softness and a brightness that are particularly satisfying.

The topical application anhydrous compositions are usually solid or pasty compositions that require therefore the presence of waxes such as in particular natural waxes or paraffin waxes.

However, when the percentages of siliconized oil and wax respectively exceed 5% and 3% by weight, we have noticed a bad compatibility, in such a way that we can only obtain a homogenous mixture, after cooling, for regions of particularly limited predetermined proportions. By homogenous mixture we mean a mixture in which the different constituents are distributed identically in all aspects of the mixture. The absence of compatibility between the constituents of a composition is translated by a degradation of the latter and in particular by the apparition of a syneresis. Furthermore, we have noticed that this compatibility problem of the silicon oils happened with most waxes.

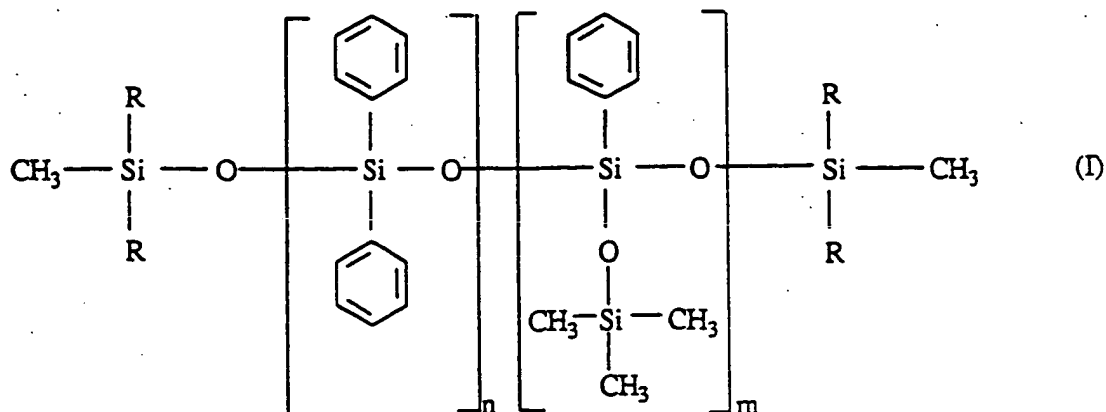
Various solutions were considered in order to resolve this problem. Thus, in GB 1.140.536, they mention the use of waxes containing at least 15% of silicon wax. Also, in EP-A-205.961 they considered using paraffin waxes, microcrystalline or hydrocarbonic waxes in association with a resin and a polyolefin. Also, in US 5.085.855 they mention the use of a combination of lanolin oil, lanolin wax, gelling agents and hydrocarbonic polymers. However, according to these various solutions, it is necessary to combine the various elements in limited predetermined proportions, and any addition of an additional compound requires that a compatibility diagram be prepared previously and the greater the number of compounds forming the composition, the more complex the diagram.

After much research, we have now noticed, surprisingly and unexpectedly so, that by associating a specific silicon wax and an ethylene homopolymer or ethylene copolymer wax resulting from a selection based on both the nature of the wax and the

molecular mass thereof, we obtain homogenous siliconized anhydrous cosmetic compositions without however being limited by a region of restricted proportions.

Therefore, the object of this invention is a siliconized anhydrous cosmetic or dermatologic composition consisting of at least one homogenous fatty phase, characterized by the fact that said fatty phase contains:

i) between 5 and 97% by weight in relation to the total weight of said fatty phase of at least one silicon oil matching the following formula:



where:

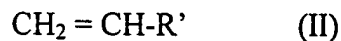
R represents an alkyl radical that contains from 1 to 30 carbon atoms, an aryl or aralkyl radical,

n represents a whole number between 0 and 100, and

m represent a whole number between 0 and 100,

with the condition that  $n + m$  must be a number between 1 and 100, and

ii) between 3 and 50% by weight in relation to the total weight of said fatty phase, of a wax whose melting point falls between 50 and 135°C, and consists of at least one polymer whose molecular weight is between 200 and 1500 chosen from the ethylene homopolymers and ethylene copolymers and of one monomer that matches the formula:



where:

R' represents an alkyl radical containing from 1 to 30 carbon atoms, an aryl or aralkyl radical.

Among the alkyl radicals with 1 to 30 carbon atoms, we can name the methyl, ethyl, propyl, isopropyl, decyl, dodecyl and octadecyl radicals.

The preferred aryl radical is the phenyl or tolyl radical.

The preferred aralkyl radical is the benzyl or phenethyl radical.

Among the silicon oils that match formula (I), we preferably use those with a viscosity, measured at 25°C, of between 5 and 500 centistokes (cSt).

Among these, we can in particular name the silicon oil commercialized by Goldschmidt under the name "Abil AV 8853", as well as those that are commercialized by Dow Corning under the names "DC 556" and "SF 558" and that commercialized by Rhône Poulenc under the name "Silbione 70633 V 30".

According to a preferred method for preparing the compositions as set forth in the invention, the silicon oil with a formula (I) is present in a percentage ranging between 10 and 90% by weight in relation to the total weight of the fatty phase.

The use of ethylene homopolymer or copolymer waxes such as those defined previously provided the mixture with many advantages. Indeed, the mixture obtained shows a great thermal stability, a thixotropic character that leads to excellent spreading properties, a very good resistance to water which allows for a good cosmetic hold of the products on the skin as well as on the keratinous fibers. Furthermore, they allow for the dispersion of a large quantity of solid particles while preserving good application properties. In addition to which, as they are synthetic agents, they do not show the problems of variability as observed with the natural compounds.

According to a preferred mode of preparation of the compositions as set forth in the invention, the wax used as defined previously is chosen from among the ethylene homopolymers, ethylene-propylene copolymers and the ethylene-hexene copolymers.

Among the ethylene homopolymers that can be used as set forth in the invention, we can name in particular those that are commercialized by Bareco under the names "Polywax 500", "Polywax 655" and "Polywax 1000", those commercialized by Langer & Co. under the names "PE 1500F" and "PEW 1555", that commercialized by R.T. Newez under the name "TN WAX 1495" and by Allied Chemical Corp. under the name "AC 1702".



Among the ethylene copolymers that can be used in accordance with the invention, we can name in particular the ethylene-propylene copolymers commercialized by Bareco under the names "Petrolite CP-7" and "Petrolite CP-12" and the ethylene-hexene copolymers commercialized by Bareco under the names "Petrolite CH-7" and "Petrolite CH-12".

According to a preferred mode of preparation in accordance with the invention, the wax as defined previously is present in a percentage ranging from 5 to 30% by weight in relation to the total weight of the fatty phase.

It is possible to introduce in the compositions as set forth in the invention other compounds usually used in the cosmetic or dermatologic fields. Contrary to the known compositions, for which it is necessary to create diagrams of complex compatibility, which means taking into account all the elements present in the composition, in the compositions as set forth in the invention, we need only create a diagram of compatibility of the additive with one of the compounds of the association, meaning either with the ethylene homo- or copolymer wax or with the silicon oil. If the additive is compatible with either one, it is necessarily compatible with their association.

Among the additives that can be incorporated in the compositions in accordance with the invention, we can name in particular the fatty additives chosen from amongst oils, waxes and oily gelling agents. The percentage of fatty additive present in the composition as set forth in the invention is between 0.5 and 92% by weight in relation to the total weight of the fatty phase and preferably between 2 and 85%.

The oils that can be used in the compositions in accordance with the invention can be of mineral, animal, vegetable or synthetic origin.

As an oil of mineral origin, we can among others name paraffin oil, white mineral oil and mineral oils in general that have a boiling point ranging between 310 and 410°C.

As an oil of animal origin, we can among others name the perhydrosqualene.

As an oil of vegetable origin, we can among others name the sweet almond oil, calophyllum oil, palm oil, avocado oil, jojoba oil, sesame oil, olive oil, castor oil and cereal germ oils such as for example wheat germ oil.

As a synthetic oil, we can among others name the synthetic esters such as purcelin oil, butyl myristate, isopropyl myristate, cetly myristate, isopropyl palmitate, butyl

stearate, hexadecyl stearate, isopropyl stearate, octyl stearate, isocetyl stearate, decyl oleate, hexyl laurate, glycol propylene dicaprylate and diisopropyl adipate.

As oils that can also be used in the compositions as set forth in the invention, we can name the organic alcohols such as oleyl alcohol, linoleic alcohol, linolenic alcohol, isostearyl alcohol and octyl dodecanol and the esters derived from lanolin acid such as isopropyl lanolate and isocetyl lanolate.

We can also name the acetylglycerides, alcohol octanoates and decanoates and polyalcohols such as glycol and glycerol polyalcohols and the alcohol and polyalcohol ricinoleates such as cetyl alcohol and polyalcohol.

The waxes that can be used in the compositions as set forth in the invention can be of mineral, fossil, animal or vegetable origin or yet from hydrogenated oils or fatty esters that are concrete at 25°C.

As mineral waxes that can be used in accordance with the invention, we can name among others the microcrystalline waxes, paraffin, petroleum jelly and ceresin.

As fossil waxes, we can name the ozokerite and the montan wax.

As waxes of animal origin, we can name bees wax, spermaceti, lanolin wax as well as the lanolin derivatives such as lanolin alcohol, hydrogenated lanolin, hydric lanolin, acetylated lanolin, lanolin fatty acids and acetylated lanolin alcohol.

As waxes of vegetable origin, we can among others name the candelilla wax, carnauba wax, Japan wax and cocoa butter.

As hydrogenated oils that are concretes at 25°C, we can among others name the hydrogenated castor oil, hydrogenated palm oil, hydrogenated tallow and hydrogenated coconut oil.

As fatty esters that are concretes at 25°C, we can among others name the glycol propylene mono-myristate and the myristyl myristate.

As waxes used in the compositions as set forth in the invention, we can yet name the cetyl alcohol, stearyl alcohol, the mono, di and triglycerides concrete at 25°C, the stearic monoethanolamide, the colophony and its derivatives such as the glycol and glycerol abietates, the sucro-glycerides and the oleates, myristates, lanolates, stearates and calcium, magnesium, zinc and aluminum dihydroxystearates.

The percentage of fatty additives in the form of wax introduced in the compositions as set forth in the invention is preferably less than or equal to the percentage of ethylene homo- or copolymer waxes.

As oily gelling agents that can be used in the compositions as set forth in the invention, we can among others name the metallic esters such as polyoxyaluminum stearate and aluminum or magnesium hydroxystearate, the fatty acid and glycol esters, the triglycerides, the mixtures of fatty alcohols, the derivatives of cholesterol and in particular, the hydroxycholesterol and the clay mineral that inflate in the presence of oil and in particular those belonging to the montmorillonite group.

Furthermore, the compositions as set forth in the invention may contain a lipophilic additive chosen from among surfactant agents, filters, vitamins, hormones, antioxidant agents, preservatives, colorants, perfumes and their mixtures.

In addition to their fatty phases, the compositions as set forth in the invention may contain charges, meaning solid compounds in the form of powders. The percentage of charges in the compositions as set forth in the invention generally ranges between 0.5 and 97% by weight in relation to the total weight of the composition.

The compounds in the form of powder that can be used as set forth in the invention can be either natural or synthetic in origin. Among these, we can name:

(a) mineral powders, such as talc, kaolin, mica, silica, silicates, alumina, zeolites, hydroxyapatite, sericite, titanium dioxide, micas, titanium, zinc oxide, barium sulfate, iron oxides, manganese violet, chromium oxide, ultramarine blue, bismuth oxychloride, boron nitrate and metallic powders such as aluminum powder.

(b) vegetable powders such as corn, wheat and rice starch powders.

(c) organic powders such as nylon, polyamide, polyester, polytetrafluoroethylene polyethylene powders.

(d) organometallic powders, such as pigments that associate the zirconium, barium or aluminum with organic colorants.

In addition, the above-mentioned powders can be coated such as for example with fatty acid metallic salts, amino acids, lecithin, collagen, siliconized compounds, fluorinated compounds, fluorosiliconized compounds or by any other common coating.

The cosmetic or dermatologic compositions as set forth in the invention may appear in different forms such as in the form of oily gels, of solid products such as compressed or poured powders or yet in the form of sticks. They can be used in particular as care, cleansing or make-up products.

When they appear in the form of make-up, they can in particular be foundations, mascara, lipsticks, eye-shadows or blushes.

The compositions as set forth in the invention are prepared according to conventional methods, meaning by hot homogenization of their various constituents followed by a cooling.

The various forms of compositions described previously are obtained based on the nature and the percentages of compounds introduced as well as on the cooling method used. Thus, by simple cooling whether agitated or not, we can obtain a composition in the form of a gel. We can also obtain compositions of different forms by pouring the hot mixture into different types of conditioning.

The products in compressed form are of course obtained by applying pressure on the product.

We will now provide as illustrations, several examples of compositions as set forth in the invention.

#### **EXAMPLE 1: Oily gel**

##### *Phase A:*

-Silicon oil commercialized by Dow Corning under the name "SF-558"	55 g
- Sesame oil	20 g

##### *Phase B:*

-Ethylene homopolymer commercialized by Allied Chemical under the name "AC 1072"	20 g
-Ethylene homopolymer commercialized by Bareco under the name "Polywax 655"	5 g

The preparation of phase A is done by mixing its constituents under agitation at room temperature. After the homogenization, the constituents of phase B are added, then heated at a temperature of approximately 107°C. After melting and homogenization, we obtain a clear environment. The oily gel is then obtained by cooling to room temperature.

The gel so obtained shows excellent spreading properties and leads to the formation of a very soft and protective film.

### **EXAMPLE 2: Poured foundation**

#### *Phase A:*

-Silicon oil commercialized by Dow Corning under the name "DC 556"	14 g
-Hollow microspheres of thermoplastic material commercialized by Casco-Nobel under the name "Expandel 551 DE"	1.5g

#### *Phase B:*

-Ethylene homopolymer commercialized by Langer under name "PEW 1555"	7g
-Microcrystalline wax	4g

#### *Phase C:*

-Hexyl ethyl-2 palmitate	19g
-Hydrogenated isoparaffin	14g
-Isopropyl lanolate	9.3g
-Paraben propyl	0.3g

#### *Phase D:*

-Iron oxide	3g
-Titanium dioxide	13g
-Zinc oxide	3g
-Talc	12g

The constituents of phase B and phase C are mixed then heated at a temperature of approximately 107°C. After melting all the constituents, the mixture so obtained is homogenized then cooled at a temperature of approximately 90°C. The constituents of phase A that have been mixed previously at room temperature are then added, followed lastly by the constituents of phase D. After the homogenization, the mixture so obtained is poured while hot into cupels.

After cooling at room temperature, we have a poured foundation. This foundation has excellent spreading properties on the skin as well as a very good hold.

**EXAMPLE 3: Lipstick**

*Phase A:*

-Silicon oil commercialized by Dow Corning under the name "DC 556"	23g
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*Phase B:*

-Ethylene homopolymer commercialized by Langer under the name "PEW 1555"	7g
-Microcrystalline wax	7g
-Lanolin	7g

*Phase C:*

-Castor oil	22g
-Sesame oil	22g

*Phase D:*

-Pigments	12g
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A mixture of the phase B and phase C constituents is mixed at a temperature of approximately 107°C. After melting of the waxes, the mixture is homogenized then cooled at a temperature of approximately 95°C. Phase A is then added followed by phase D. After homogenization of the mixture, it is poured into alveoli.

After cooling, we have a lipstick. This lipstick is easily applied to the lips and has great softness. In addition, it has an excellent hold, meaning an excellent resistance to use and does not run.

**EXAMPLE 4: Lipstick**

*Phase A:*

-Silicon oil commercialized by Rhône Poulenc under the name "Silbione 70633 V 30"	10g
-Jojoba oil	25g
-Sesame oil	27g

*Phase B:*

-Ethylene homopolymer commercialized by Bareco under the name "Polywax 500"	20g
-Lanolin	6.5g

*Phase C:*

-Pigments 11.5g

**EXAMPLE 5: Lipstick**

*Phase A:*

-Silicon oil commercialized by Rhône Poulenc  
under the name "Silbione 70633 V 30" 10g

-Jojoba oil 25g

-Sesame oil 27g

*Phase B:*

-Ethylene and propylene copolymer commercialized  
by Bareco under the name "Petrolite-CP-7" 20g

-Lanolin 6.5g

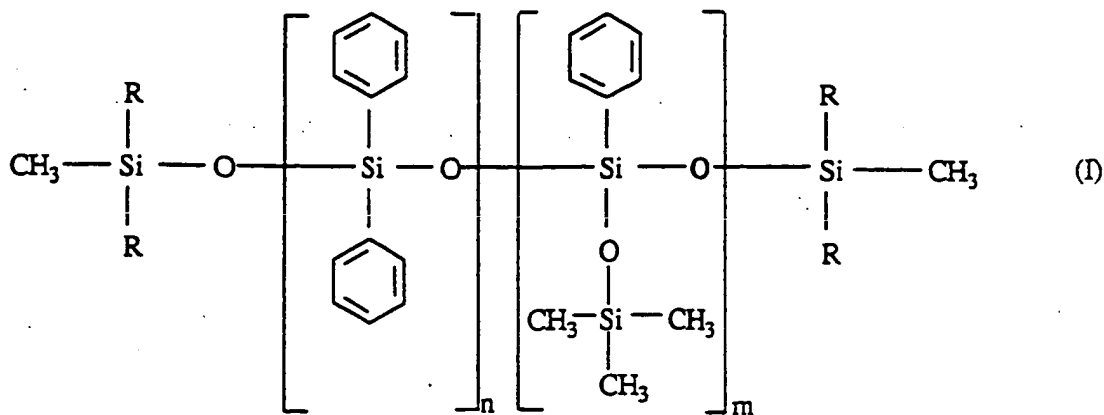
*Phase C:*

-Pigments 11.5g

## CLAIMS

1. Siliconized, anhydrous cosmetic or dermatologic composition, consisting of at least one homogenous fatty phase, characterized by the fact that said fatty phase contains:

i) between 5 and 97% by weight in relation to the total weight of said fatty phase of at least one silicon oil matching the following formula:



where:

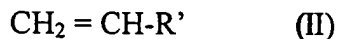
R represents an alkyl radical containing from 1 to 30 carbon atoms, an aryl or aralkyl radical,

n represents a whole number between 0 and 100 and,

m represents a whole number between 0 and 100,

with the condition that  $n + m$  must be between 1 and 100, and

ii) between 3 and 50% by weight in relation to the total weight of said fatty phase of a wax with a melting point ranging between 50 and 135°C, and consisting of at least one polymer whose molecular weight is between 200 and 1500 chosen from among the ethylene homopolymers and the ethylene copolymers and a monomer that matches the formula:



where:

R' represents an alkyl radical with 1 to 30 carbons atoms, an aryl or aralkyl radical,

2. A composition as set forth in claim 1, characterized by the fact that said silicon oil has a viscosity ranging between 5 and 500 cSt.



3. A composition as set forth in one of the previous claims, characterized by the fact that said silicon oil is present in a percentage ranging between 10 and 90% by weight in relation to the total weight of the fatty phase.

4. A composition as set forth in one of the previous claims, characterized by the fact that said wax is chosen from among the ethylene homopolymers, the ethylene-propylene copolymers and the ethylene-hexene copolymers.

5. A composition as set forth in one of the previous claims, characterized by the fact that said wax is present in a percentage ranging between 5 and 30% by weight of the total weight of the fatty phase.

6. A composition as set forth in one of the previous claims, characterized by the fact that said composition contains in addition at least one fatty additive chosen from an oil, a wax or an oily gelling.

7. A composition as set forth in claim 6, characterized by the fact that said fatty additive is present in a percentage ranging between 0.5 and 92% by weight in relation to the total weight of the fatty phase.

8. A composition as set forth in claim 7, characterized by the fact that when the fatty additive is a wax, this wax has a percentage that is less than or equal to that of the ethylene homo- or copolymer wax as defined in claim 1.

9. A composition as set forth in one of the previous claims, characterized by the fact that said composition contains in addition a lipophile additive chosen from among surfactant agents, filters, vitamins, hormones, antioxidant agents, preservatives, colorants, perfumes and their mixtures.

10. A composition as set forth in one of the previous claims, characterized by the fact the said composition contains in addition charges in a percentage ranging between 0.5 and 97%.